

CLAIMS

1. A forming die apparatus for simultaneously forming a hole in a predetermined region of a disk of a disk-shaped part with a shaft which has been cold-forged, and
5 removing an outer circumferential portion of the disk, characterized by a lower support base vertically moveable by a predetermined stroke for holding the shaft of the disk-shaped part, a punch fixed to a lower die assembly, an upper support base for holding the disk of the disk-shaped part in coaction with the lower die assembly in response to downward movement of the upper die assembly, and an upper die vertically moveable with respect to
10 said upper support base, the arrangement being such that while the disk-shaped part with the shaft is being lowered the predetermined stroke upon downward movement of the upper die assembly, a hole is formed in the disk by the punch, and upon further downward movement of the upper die assembly, the downward movement of the disk-shaped part with the shaft stops and the outer circumferential portion of the disk is removed by the
15 upper die.
2. A cold-forging die apparatus for upsetting a blank for cold forging between a punch and a die, wherein said punch has a nib and a reinforcing ring fitted around said nib, said nib being split into an inner nib and an outer nib which are held in interfitting relationship to each other, by a split surface which is located in the vicinity of a boundary between a
20 region where radial stresses mainly act and a region where axial stresses mainly act when the blank is upset.
3. A cold-forging die apparatus according to claim 2, wherein the inner nib where axial stresses mainly act when the blank is upset has an axial dimension selected such that

the inner nib projects axially beyond the outer nib, in view of an axial deformation caused when the blank is upset.

4. A cold-forging die apparatus according to claim 2, wherein the cold-forging die apparatus is used to form a counterweight of a crankshaft.

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